



# 第三届可持续发展大数据国际论坛

The 3rd International Forum on Big Data for Sustainable Development Goals

2023年9月6日-8日 中国 北京

## **Special session title: The 3rd Forum on Earth Observation in Support of Sustainable Development Goals**

**Session Organizer: Alliance of Sustainable Development Goals Satellites (ASSA)**

### **Short Description**

Under the theme of ‘Earth Observation in support of Sustainable Development Goals’, participants are encouraged in discussions regarding the fulfillment of earth observation requirements aligned with the Sustainable Development Goals (SDGs). The exchanges encompassed innovative methods, technology promotion, and practical applications of big data and digital technologies to advance the implementation of SDGs. In addition, satellite constellation plans dedicated to SDGs will also be discussed.

### **Objectives**

The forum featured thematic presentations and a high-level dialogue. Thematic presentations will provide an in-depth exchange of views on the value of the ASSA satellite consortium's major satellite series in contributing to the 2030 Agenda, concerning SDGs such as zero hunger (SDG 2), clean water and sanitation (SDG 6), affordable clean energy (SDG 7), sustainable cities and communities (SDG 11), climate action (SDG 13), life below water (SDG 14), life on land (SDG 15), and partnerships for the goals from the perspectives of scientific and technological development, regional innovation demonstration, and multi-party participation mechanisms.

The High-Level Dialogue session will focus on the theme ‘Space technology for global sustainable development’, with exchanges on space observation needs for the achievement of the SDGs, methodological innovations, technological promotion and demonstration applications of big data and digital technologies for sustainable development and the development of the Sustainable Development Satellite Constellation Plan.

### **Expected Results**

Through this session's exchange and discussions, we aim to achieve the following expected outcomes:

1. Promoting the establishment of the Sustainable Development Satellite Constellation Programme to better serve the 2030 Agenda.
2. Exploring the methods and technologies to fill the data gaps of the 2030 Agenda, especially the acquisition of global large-scale data.
3. To identify possible ways to use existing satellites to serve the 2030 Agenda, especially for the development of virtual satellite constellations
4. To establish new co-operation and partnerships between participants for joint research projects and initiatives.

### **Agenda**

**Time 13:30-16:15, September 7th 2023 Room: 305 E**

**Moderator:**



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**SHI Jiancheng**

**Professor**

**National Space Science Center, Chinese Academy of Sciences, China**

SHI Jiancheng is a distinguished expert of the Thousand Talents Program, a researcher at the National Space Science Center of the Chinese Academy of Sciences, director of the State Key Laboratory of Remote Sensing Science, and a Fellow of the Institute of Electrical and Electronics Engineers (IEEE), the Society of Photo-Optical Instrumentation Engineers (SPIE), and the International Academy of Electromagnetics and Electronic Sciences. He is mainly engaged in microwave remote sensing and water cycle research. He is now the deputy editor of Remote Sensing of Environment, the Chief editor of Remote Sensing Technology and Application, the deputy editor of the Journal of Space Science, and the editorial board of Science-Earth Science in China. As the chief scientist, he has presided over 1 project of the 973 program, 1 project of the 863 program and 2 key funds. A total of 232 SCI indexed papers were published in international journals, and the total number of citations was more than 16,500; For many years, he has been the chairman, member and sub-chairman of the technical committee of many important international remote sensing conferences such as IGARSS, PIERS, SPIE, International Quantitative Remote Sensing Progress Conference, International SAR Inversion Physical Earth Parameters and Applications Conference.

### Participants

**Event 1 (13:35-13:50)**

**Earth Observation Technology serves SDGs**



**GUO Huadong**

**Director General**

**International Research Center of Big Data for Sustainable Development Goals**



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GUO Huadong is the Director General of the International Research Center of Big Data for Sustainable Development Goals (CBAS), an Academician of Chinese Academy of Sciences (CAS), a Foreign Member of the Russian Academy of Sciences, a Foreign Member of the Finnish Society of Sciences and Letters, and a Fellow of TWAS. He presently serves as Honorary President of the International Society for Digital Earth (ISDE), Director of the International Center on Space Technologies for Natural and Cultural Heritage under the Auspices of UNESCO, Chair of the Digital Belt and Road Program, and Editor-in-Chief of the International Journal of Digital Earth and the journal of Big Earth Data. He served as a member of the UN 10-Member Group to support the Technology Facilitation Mechanism for SDGs (2018-2021), Chairman of the International Committee of Remote Sensing of Environment (2017-2020), President of ISDE (2015-2019), and ICSU Committee on Data for Science and Technology (CODATA) (2010-2014). He specializes in remote sensing, radar for Earth observation, and Digital Earth science. He is the Principal Investigator of Moon-based Earth Observation Research Project of National Natural Science Foundation of China and the Chief Scientist of the Big Earth Data Science Engineering Project of CAS. He has published more than 500 papers and 24 books, and is the awardee of 18 domestic and international prizes.

### Event 2 (13:50-14:05)

UNOSAT's GIT Solutions for enhancing disaster and climate resilience in support of the SDGs



#### **Belabbes Samir**

**Associate Programme Officer**

**United Nations Satellite Centre**

Samir Belabbes, PhD., was awarded his PhD in geophysics from the Louis Pasteur University of Strasbourg (France) and an Engineering degree from the university of sciences and technology of Algiers (Algeria). His doctorate thesis was mainly focused on the use of EO data and more specifically the radar interferometry techniques for seismic risk assessment applications in North Africa and Anatolia. He has more than twenty years of experience in remote sensing data, monitoring of ground data and field observation for environmental and geological studies. He has been working as an Associate Programme Officer for the United Nations Satellite Centre (UNOSAT) where he is primarily involved in remote sensing data processing and interpretation for environmental and biomass degradation in the tropical and sub-tropical areas, natural disasters, and risk assessment applications and is the main activation manager for rapid mapping activities. He has also professional experience in geophysical field exploration using aeromagnetic and gravimetric measurements, research and university teaching in North-Africa and Europe.



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Event 3 (14:05-14:10)

ASSA Product Launch

Event 4 (14:10-14:20)

High-Resolution Earth Observation empowers Sustainable Development



**ZHAO Jian**

**Director**

**Earth Observation System and Data Center, China National Space Administration**

ZHAO Jian is the Director of Earth Observation System and Data Center of China National Space Administration, the Chief Designer and Deputy General Director of the China High-resolution Earth Observation System Project, and the Working Group Leader of the BRICS Remote Sensing Satellite Constellation in 2022.

He has long been engaged in space development strategy and technology research, engineering construction, organization and management of major space special projects, international space exchange and promotion, etc. He has a forward-looking strategic and international vision, rich management ability and implementation experience of major national special projects, and has made important contributions to the rapid and healthy development of space. He is an outstanding professional in space across industries, fields and systems.

As a leading technology leader in the field of earth observation in China, he will continue to be committed to promoting the construction of earth observation systems and efficient application of data, serving economic and social development, and leading China's space to help achieve the 2030 Sustainable Development Goals of the United Nations.

Event 5 (14:20-14:30)

Ecological environment of satellite remote sensing monitoring boost the global sustainable development





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**GAO Jixi**

**Director**

**Satellite Application Center for Ecology and Environment, MEE, China**

GAO Jixi, the Director of the Satellite Application Center for Ecology and Environment, MEE. He is a member of the 14th National Committee of the Chinese People's Political Consultative Conference (CPPCC), the Committee on Population, Resources and Environment, the Standing Committee of the Central Committee of the Zhigong Party, the Director of the Committee on Ecology, Environment and Sustainable Development, and researcher.

He has long been engaged in the research and management of ecological environmental protection, the demonstration, design, development, in-orbit testing and application of ecological environmental satellites, etc. He was listed in the first batch of national environmental protection leading talents and national candidates for the National Project of One Hundred and Ten Million Talents, and presided over the completion of a large number of pioneering work and achieved fruitful scientific research results. These scientific research achievements involve five second-class awards for national scientific and technological progress and more than 30 nationally authorized invention patents.

His honors include: National "outstanding contributions to young and middle-aged experts", the Central State organs " May 1st" Labor Award, the national outstanding professional and technical personnel, the national outstanding scientific and technological workers, the national "sand control and advanced individual" and other honors. He has been honored as "Outstanding Individual in Sand Control and Prevention" and "Outstanding Individual in the Ministry of Ecology and Environment" for two consecutive years.

### Event 6 (14:30-14:40)

**Haiyang Satellite Series serve SDGs**





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**LIN Mingsen**

**Director General**

**National Satellite Ocean Application Service**

LIN Mingsen received the B.S. degree in applied mechanics from the National University of Defense Technology, Changsha, China, in 1984, and the Ph.D. degree in computational mathematics from the Computing Center, Chinese Academy of Sciences, Beijing, China, in 1992.

He is the Chief Designer of the ground application system for Chinese salinity satellites, synthetic aperture radar satellites, and new generational ocean dynamic satellites and was a Deputy Chief Designer of the ground application system for HY-1 and HY-2 satellites, where he organized the framework for the Chinese Ocean Satellite outline and managed the construction of the ground application system for the Chinese Ocean Satellite with the National Satellite Ocean Application Service, Beijing, China. He is one of the Founders of satellite ocean remote sensing in China. He played a crucial role in developing the Chinese ocean satellite and manned space flight. His research interests include ocean satellite data processing, remote sensing of the ocean, and its applications.

**Event 7 (14:40-14:50)**

**FengYun's Actions for SDG Goals**



**WANG Jinsong**

**Director General**

**National Satellite Meteorological Center**

Dr. WANG Jing-Song, Professor, currently serves as Director-General of the National Satellite Meteorological Center(NSMC) and the National Centre for Space Weather(NCSW). Dr. Wang is also serving as the standing council member of Chinese Society of Astronautics (CSA), the council member of Chinese Society of Space Science (CSSS) and Chinese Meteorological Society (CMS), as well as the vice chairman of China Science Writers Association (CSWA). Dr. Wang's contributions to and achievements in the fields of integrated meteorological observations, FengYun satellite development as well as space weather operation in China are also shared internationally through CMA's engagement and cooperation programs.

**Event 8 (14:50-15:00)**

**Guotu Satellite Series serve SDGs**



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**WANG Quan**

**Director General**

**Land Satellite Remote Sensing Application Center, MNR**

WANG Quan, Director General and researcher of the Land Satellite Remote Sensing Application Center, MNR, member of the 13th National Committee of the Chinese People's Political Consultative Conference (CPPCC), vice chairman of the China Association of Remote Sensing Application (CARSA), chairman of the Subcommittee 3 on Satellite Application of National Technical Committee 230 on Geographic Information of Standardization Administration of China (TC230/SC3), one of the First National Invited Natural Resources Ombudsmen, and commander-in-chief of the High-resolution Multi-Mode Satellite Engineering Application System. He has been engaged in the construction and application of natural resources land satellite remote sensing system, and received a number of awards, including but not limited to the second prize of the State Technological Innovation Award, the second prize of the State Science and Technology Advancement Award, and the first prize of the Science and Technology Advancement Award for Geodesy Photogrammetry and Cartography of the Chinese Society for Geodesy Photogrammetry and Cartography (CSGPC), and has been granted special government allowances from the State Council.

### Event 9 (15:00-15:10)

**SDGSAT-1 serves SDGs**



**DOU Changyong**

**Secretary General of ASSA**

**International Research Center of Big Data for Sustainable Development Goals**



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DOU Changyong is an associate professor with International Research Center of Big Data for Sustainable Development Goals (CBAS), serving as secretary general of Alliance of Sustainable Development Goals Satellites (ASSA).

As a core staff member, he participated in the demonstration and overall design of the Sustainable Development Goals Science Satellite 1 (SDGSAT-1), he also organized and implemented the demonstration of the technical indexes and determination of the indexes of the engineering system of the SDGSAT-1. Moreover, he supervised and organized the development of the satellite engineering systems, the launch of the satellite, the release of the first map and the implementation of the SDGSAT-1 open science programme. At the same time, he also developed the theory and technical methods of joint radiometric and geometric calibration of remote sensing images on multiple platforms, and carried out joint radiometric and geometric calibration of multiple types of Earth observation payloads on airborne, SDGSAT-1 satellites and space stations, which ensured quantitative remote sensing applications and the production of high-precision data products. With regard to the work on SDGs, Dou Changyong carried out research on SDGSAT-1 services for monitoring and assessment of SDGs. He and his team took advantage of the unique advantages of the Glimmer imager, Multispectral Imager and Thermal Infrared Spectrometer data of the SDGSAT-1 satellite, in conjunction with other data sources, organized research work related to SDG2, SDG6, SDG11, SDG13, SDG14 and SDG15.

### Event 10 (15:20-16:10)

**High-Level Dialogue: Construct ‘Sustainable Development Satellite Constellation Plan’ to better serve the implementation of the 2030 Agenda**



**Belabbes Samir**

**Associate Programme Officer**

**United Nations Satellite Centre**

Samir Belabbes, PhD., was awarded his PhD in geophysics from the Louis Pasteur University of Strasbourg (France) and an Engineering degree from the university of sciences and technology of Algiers (Algeria). His doctorate thesis was mainly focused on the use of EO data and more specifically the radar interferometry techniques for seismic risk assessment applications in North Africa and Anatolia. He has more than twenty years of experience in remote sensing data, monitoring of ground data and field observation for environmental and geological studies. He has been working as an Associate Programme Officer for the United Nations Satellite Centre (UNOSAT) where he is primarily involved in remote sensing data processing and interpretation for environmental and biomass degradation in the tropical and sub-tropical areas, natural disasters, and risk assessment applications and is the main activation manager for rapid mapping activities. He has also professional experience in geophysical





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field exploration using aeromagnetic and gravimetric measurements, research and university teaching in North-Africa and Europe.



**Khalid Alrowaily**

**Head of Big Data Section**

**Planning and Statistics Authority**

Chief Data Officer. Skilled in Business Process, Business Intelligence, Advanced Analytics, Requirements Analysis, Databases, Enterprise Architecture, and ITIL. Strong operations professional. Having a Doctor of Philosophy (PhD) focused in Data Mining and Sentiment Analysis.



**Birendra Bajracharya**

**Senior Remote Sensing, Geoinformation Specialist**

**International Centre for Integrated Mountain Development (ICIMOD)**

Birendra Bajracharya has over twenty five years professional experience working on various aspects of remote sensing and geoinformation system applications in relation to natural resources, land cover, biodiversity and conservation planning, decision support systems and spatial data infrastructure and have been involved extensively in developing and delivering various training courses on GIS/RS in all eight HKH countries. He has an MSc in Geo-Informatics from the International Institute of Geo-Information Science and Earth Observation, the Netherlands, an MBA from Tribhuvan University, Nepal, and BE in Civil Engineering from the University of Rajasthan, India.



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**CHU Wenbo**

**Work Programme Officer**

**Group on Earth Observations (GEO)**

CHU Wenbo is the Work Programme Officer at the Group on Earth Observations (GEO) Secretariat. She coordinates the development and implementation of the GEO Work Programme activities. She coordinated the data sharing efforts within GEO between 2014-2017, first as a seconded expert and later as a staff member. Before joining GEO, she was the Deputy Director of Division of the National Science and Technology Infrastructure Center in China. She led several research projects on policies and mechanisms for Science and Technology resource sharing between 2007-2013. She received a master's degree in Engineering in Tsinghua University in 2007. She is also a certified Project Management Professional.



**YUE Tao**

**Director**

**China Centre for Resources Satellite Data and Application**

YUE Tao is the Director of China Centre for Resources Satellite Data and Application. He is also the vice president of the China Association of Remote Sensing Applications (CARSA), the vice president of the Chinese Society of Geodesy Photogrammetry and Cartography (CSGCA), and the executive director of the Chinese Society of Astronautics (CSA).

He has long been engaged in the design and manufacture of remote sensors and space vehicles, space information processing, space technology application and promotion, and other related work.



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**ZHONG Xing**

**Assistant General Manager, Chief Designer**

**Chang Guang Satellite Technology Co., LTD**

ZHONG Xing, doctor of engineering, doctoral supervisor, Assistant General Manager and Chief Designer of Chang Guang Satellite Technology Co., LTD. He is member of Chinese Association of Young Scientists and Technologists, Chinese Society of Space Research, Optical Society of America (OSA), and International Society for Optical Engineering (SPIE), mainly engages in the study of satellite system and optical remote sensing. He presided over and participated in more than 10 terms of 863, natural fund, general assembly pre-study and other development efforts of the aerospace project; published more than 60 academic papers in the mainstream learned periodical at home and abroad (SCI records 9 articles), and 9 academic papers was authorized patents. Won the special prize of dean in Chinese Academy of Sciences, Certificate High Distinction of the ninth Changbai Youth Science and technology Award, the first excellent young pioneer of the Changchun Association Branch, Lujiaxi young talent award of Chinese Academy of Sciences, the young post expert in provincial institutes, and excellent member of Youth Promotion Association, etc. He is in the first batch selected by the Youth Innovation Promotion Association, and takes the post of the first President of Changchun Association Branch. In 2016, the team led by him was selected in the list of the first batch of r&d talents for major science and technology projects in Jilin Province.